USDA

United States
Department of
Agriculture

Forest
Service

April 2012

Information Packet for Comment:

20 Mile Creek Restoration

Great Divide Ranger District
Chequamegon-Nicolet National Forest

Bayfield County, Wisconsin

Legal Description

Township 44 North, Range 5 West, Section 6

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I. Introduction

The Great Divide Ranger District of the Chequamegon-Nicolet National Forest (CNNF) is proposing to restore a segment of Twentymile Creek on National Forest System lands in the Town of Grand view, Bayfield County, Wisconsin. The project would involve the removal of a remnant, eroding railroad grade crossing (located at T44N R5W Section 6), returning a braided section of stream to one channel, and lowering a 300 foot stretch of the stream channel (to reduce the slope to a more natural grade). The result would be a narrower, deeper channel with gravel and cobble substrate.

The purpose of this information package is to inform interested and affected parties of the proposal, and to solicit public comments during the official comment period on the proposal. The comments provided will be utilized in preparation of an environmental assessment (EA) and in making the decision.

Please refer to the maps, photos, drawings in the Appendix, as they provide context and meaning to accompany the text that follows.

II. Purpose and Need for Action

Twentymile Creek is a very high quality Class I native brook trout stream, receiving a good baseflow of groundwater and with consistently cold water temperatures throughout the watershed. The Twentymile Creek Watershed is functioning but at risk. It has benefitted from a large number of activities in the past that have reduced erosion and sedimentation and restored aquatic habitat; however, several conditions remain that require restoration actions to bring the watershed into a fully functioning condition. This is one of several project proposals designed to improve the condition of the stream and watershed. Appendix B: Photos further illustrates this description of the purpose and need for action.

During the early 1900's a railroad grade was constructed along Twentymile Creek crossing it in Section 6 of T44N and R5W. While abandoned many years ago, the grade continues to have a substantial impact on the stream and its aquatic ecosystem. The crossing included a concrete arch culvert accompanied by 6-8 feet of fill (Photo 1). The culvert failed many years ago along with a portion of the fill, which washed into the stream. The remaining fill continues to erode on the west side of the stream. The undersized culvert created an unnaturally high water velocity downstream, resulting in the formation of a large scour pool. Large cobble and boulders were scoured out and deposited at the outlet of this pool in a semi-circle known as the tail-water control (Photo 2). This control is at a higher elevation than the natural channel bed, causing the downstream channel to over-steepen and braid (Photo 3). There are currently multiple channels within the 100 foot stretch immediately below the tail-water control. They merge into two channels which eventually become one (300 feet downstream). The over-steepened channel extends at least 100 feet downstream from the tail-water control. The existing slopes range from 2.6 to 6.4 percent. The natural (desired) channel slope is approximately 1-2 percent (Appendix C, Figure 1, Profile Graph). The higher elevation of the tail-water control has also caused a reduction in the upstream channel slope (to

0.5%) for a distance of over 220 feet. This reduction has caused sand and gravel to accumulate in the channel upstream.

Relationship of the proposed project to the USDA Forest Service Watershed Condition Framework:

National direction for watershed condition is contained in the *USDA Forest Service Strategic Plan for FY 2007–2012* (USDA Forest Service 2007). Goal 1 is to **"**Restore, sustain, and enhance the Nation's forests and grasslands**"** (USDA Forest Service 2007). Objective 1.5 is to **"**Restore and maintain healthy watersheds and diverse habitats**"** (USDA Forest Service 2007).

The FY 2011 Forest Service Program Direction emphasizes concentrating restoration activities in a few select locations to show meaningful improvement to watershed condition. "The overarching priority for restoration is on the implementation of integrated ecosystem restoration projects on priority [targeted] watersheds at the hydrologic unit code (HUC) 6 scale with the goal of improving the targeted watershed's condition class. Priority should be given to implementing integrated ecosystem restoration projects that are collaborative and part of an all-land, large-scale conservation strategy. Restoration efforts are to focus on repairing impairments to the natural diversity and ecological dynamics of National Forest System (NFS) lands; providing ecosystem services that are important to the public including clean and abundant water, renewable energy from biomass, restored wildlife and fish habitat, forest products, and resilient forests and rangelands; and stabilizing and creating jobs (1417–1418)". "The intent of the national direction is to, first and foremost, protect high-value watersheds already in good condition, maintain the condition of watersheds to keep them from becoming threatened and, then, improve those in an impaired condition."

National policy is to use watershed conditions to help prioritize watersheds and consider resource factors, risks, values and benefits, economics, social factors, and partnership opportunities when setting priorities (FSM 2521.11b).The U.S. Department of Agriculture (USDA) *Strategic Plan for FY 2010–2015* targets the restoration of watershed and forest health as a core management objective of the national *forests* and grasslands. To achieve this goal, the Forest Service, an agency of USDA, is directed to restore degraded watersheds by strategically focusing investments in watershed improvement projects and conservation practices at the landscape and watershed scales.

Twentymile was identified as a priority watershed during the Watershed Condition Classification process described above. This prioritization led to the development of the Twentymile Watershed Restoration Action Plan (PR, Folder 6, References). The evaluation of the Twentymile watershed resulted in a condition class rating of 2 (functioning at risk). The target (desired) rating is 1 (functioning properly). Watershed condition reflects a range of variability from natural pristine (functioning properly) to degraded (severely altered state or impaired). Watersheds that are functioning properly have terrestrial, riparian, and aquatic ecosystems that capture, store, and release water, sediment, wood, and nutrients within their range of natural variability for these processes. When watersheds are functioning properly, they create and sustain functional terrestrial, riparian, aquatic, and wetland habitats that are capable of supporting diverse populations of native

aquatic- and riparian-dependent species. In general, the greater the departure from the natural pristine state, the more impaired the watershed condition is likely to be. Watersheds that are functioning properly are commonly referred to as healthy watersheds (WCF, p. 12). This proposal is one of 13 "Essential projects" that were identified within the Twentymile Watershed Restoration Plan as needed to improve the watershed condition class (from 2 to 1).

Therefore, one purpose of this project is to reduce the current impacts to Twentymile Creek at this site as one step toward improving the health and condition of the Twentymile Creek Priority Watershed, as part of USDA's Watershed Condition Framework.

Relationship of the proposed project to the Forest Plan: The Forest Plan sets goals and direction for managing the Forests through two types of management direction, Forest-wide direction, and Management Area (MA) direction. Forest-wide direction is described in terms of goals, objectives, standards and guidelines. The following goals and objectives support the proposal:

Goal 1.3: Aquatic Ecosystems- provide for ecologically healthy streams, riparian areas, lakes, and wetlands including a decline in the occurrence of exotics.

Objective 1.3e: Improve or restore aquatic/riparian habitat in streams and lakes.

Objective 1.3g: Protect and restore cold-water stream communities by maintaining Class I, II, and segments of Class III trout streams and their tributaries in a free-flowing condition.

Goal 1.5: Wildlife and Fish Habitat- conserve habitat capable of supporting viable populations of existing native and desired non-native species, and retain the integrity and function of key habitat areas.

Therefore, a second purpose of this project is to restore the natural hydrology to this section of Twentymile Creek in order to improve its aquatic and riparian habitat.

Summary of Project Objectives:

Reduce erosion and sedimentation

Indicator: tons sediment/acre

Restore hydrology

Indicators: percent channel slope, channel width/depth ratio, channel flow (CFS)

Improve aquatic and riparian habitat

Indicators: width/depth ratio, floodplain width

III. Proposed Action

The Forest Service is proposing to restore this segment of stream by:

1) Removing the remnant railroad grade crossing,
2) Lowering the tail-water control, and
3) Allowing the normal flow to be contained in one channel.

The fill at the crossing would be removed down to floodplain level for a distance of approximately 15 feet on each side of the stream (Appendix C: Figure 2). It would be tapered back on each side at a slope of 2:1. The fill on the northeast side of the channel (approximately 230 cu yards) would be returned to an upland depression further northeast along the south edge of the grade. Soil was removed from this depression in the past, for creation of the grade. A similar amount of fill on the southwest side of the channel would be disposed of at a nearby upland site (such as in a gravel pit). The remains of the concrete culvert would be hauled away and disposed of in a suitable location. The channel would be restored to a bankfull width of about 15 feet. Stream banks would be reconstructed using an excavator and rock and soil from on site to match the natural form and height of the stream. About one dozen three to eight inch diameter ash, maple, white birch and black cherry trees be removed from the grade. Most of these trees would be removed from the east side of the stream because they are growing on the area of the grade that would be removed. All disturbed soil would be seeded (native or non-invasive mix) and mulched. Silt fence would be installed to prevent sediment movement into the stream until all disturbed areas are revegetated.

The profile (slope) of the stream would be restored by lowering the tail-water control and streambed in the channel that flows to the right (facing downstream). The channel would be lowered for a distance of about 300 feet to restore a slope of about 1.7 percent (Appendix C: Profile Graph). The Forest would utilize a tracked excavator to remove the accumulated gravel and cobble from the stream channel below the grade crossing. The cobble and gravel would be removed down to the historic stream bed elevation. The material removed would be disposed of in a nearby Forest Service gravel pit.. The channel to the right appears to be the historic channel because it has bankfull widths of 13-15 feet while the left channel widths are only 7-9 feet. It has a bed of predominantly gravel and cobble with some scattered boulders, as well as two short steps that appear to be bedrock outcrops.

The channel upstream from the crossing would be allowed to adjust and restore itself naturally over time. It is anticipated that much of the accumulated sand will move downstream over time once the profile of the stream is restored below the crossing. The result would be a narrower, deeper channel with more gravel and cobble substrate.

The following project design features and mitigation measures (in addition to those required by the Forest Plan) would be utilized:

No in stream activity would occur between September 15th and April 15th to protect aquatic organism spawning and rearing.

A Heritage Resources representative would be on site during construction activities to prevent disturbance of any adjacent cultural resource sites.

All equipment used in stream will utilize biodegradable hydraulic fluid.

All construction equipment would be cleaned of mud and weed seeds prior to arriving on site.

Stream flows would be maintained through the site during construction.

IV. Location and Scope

The restoration activities would take place on National Forest Land as designated on the maps, photos, drawings in the Appendix.

The Responsible Official for this decision will be the Great Divide District Ranger. The framework of the decision to be made will be limited to:

- Whether or not to implement the series of actions as proposed in the Environmental Assessment,
- To implement an alternative series of actions to address the purpose and need and project objectives,
- To require additional project design features and mitigation measures (over and above that required by the Forest Plan) to minimize trade-offs (adverse impacts) resulting from the selected actions.

V. Preliminary Concerns

Based on the knowledge of Forest Service specialists and on public comments during similar analyses in the past, several preliminary concerns associated with the proposal were identified and have been evaluated. Following is a brief description of each.

Effects to cultural resource sites from construction activities: Cultural resources are defined as irreplaceable properties that relate primarily, but not exclusively, to past human life. They include archaeological sites, historic architecture and structures, areas, memorials, cultural landscapes and objects. They also include intangible phenomena such as social values, folklore and oral history. They possess scientific value in that they are key to understanding the development of human cultural systems. They possess cultural importance through values they convey to the public relative to the heritage left by both native and immigrant Americans.

Land and resource management activities have the potential to affect cultural resources. The Forest Service is charged with protecting these resources through the authority of Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. 470f), as amended, and implementing direction provided in 36 CFR 800, Protection of Historic Properties. The NHPA, along with other federal laws, regulations and policies, direct the Forest Service to consider the effect of proposed undertakings on cultural resources that may be eligible for inclusion in the National Register of Historic Places.

The areas that may be affected by the 20 Mile Stream Restoration project have been subjected to cultural resource survey, and reports of each of these surveys have been submitted to State Historic

Preservation Officer (SHPO) for review and comment. SHPO has concurred with the findings presented in these reports, including protective measures that have been established for each recorded cultural resource. Protective measures would be developed for any recorded cultural resources, and stipulations developed for the treatment of unanticipated discoveries to satisfy all provisions of 36 CFR 800, Protection of Historic Properties.

Effects on Regional Forester's Sensitive Species (RFSS): RFSS are plants and animals that are declining in population or habitat with evidence that further declines may lead to a proposal for Federal listing; or whose population or habitat is stable but limited. The Forest Service is responsible for protecting all federally proposed and listed species, those on the RFSS list, and those RFSS that are "likely to occur" on the Forest. Minimal habitat was identified for three RFSS Plant species; however no RFSS plants were discovered during on-the-ground plant surveys. The likelihood is low for occurrence. No issues or concerns have been identified for RFSS animals to date. A Biological Evaluation will be completed for this project to determine if there would be any effects to RFSS by the proposed activities.

Introduction of Non-Native Invasive Plant Species: Non-native invasive plants (NNIS) are aggressive plants that reduce the ecological integrity of natural systems. They can inhibit the establishment of tree seedlings, reduce available forage for wildlife, and out-compete native plants, changing the composition and function of native plant communities. Soil disturbance can provide ideal habitat for invasive plants. Many non-native invasive plant species take advantage of disturbance situations to enter and invade plant communities (Buckley, et al., 2003, p. 518). NNIS seeds and plant materials can be carried in soil attached to machinery and vehicles, and may be deposited in previously weed-free areas.

No NNIS concerns have been identified. The typical project design features required for disturbance including equipment cleaning prior to arrival at the site, the use of weed free fill and mulch material, use of a specific seed mixture, and post-disturbance monitoring would be implemented.

Effects to Water Quality and Aquatic Organisms: The Wisconsin Department of Natural Resources (WDNR) and U.S. Forest Service (USFS) recognize that Wisconsin has thousands of road and trail stream crossings which can adversely affect water quality, aquatic connectivity and channel morphology. The two agencies have various responsibilities for protecting, managing and restoring streams and aquatic resources. The WDNR has responsibility for protecting water quality under the federal Clean Water Act, for fish and wildlife management and trust responsibility for public rights in navigable waters. The Forest Service has responsibility for managing National Forest System lands within Wisconsin under the requirements of a variety of federal laws, regulations and executive orders including the National Forest Management Act, the Clean Water Act, and Executive Order 11990 for the Protection of Wetlands.

While the purposes of the project are to improve water quality and hydrologic function, long-term impacts associated with the existing condition and short-term impacts resulting from implementation of the project have been identified. Long-term impacts are caused by the eroding railroad grade and resulting sedimentation of the stream channel and floodplain. Short-term impacts caused by erosion and sedimentation during construction would be disclosed and managed through project design and mitigation measures. These features and measures would be developed from the applicable Federal and State of Wisconsin requirements, including the Clean Water Act, National Forest Management Act, CNNF Land and Resource Management Plan, WI State Best

Management Practices for Water Quality, Chapter 30 of WI Statutes, and Army Corps of Engineers 404 Permit, at a minimum.

VI. Preliminary Alternatives

At this time only the proposed action and no action are being analyzed. Further alternatives may be developed if an additional management solution is identified that achieves the desired condition, or if this official comment period results in the identification of significant issues (impacts).

VII. Comments on the Proposal

Comments in response to this proposal should focus on 1) the proposal; 2) issues or impacts from the proposal; and 3) possible alternatives for addressing issues associated with the proposal. We are especially interested in information that might identify a specific undesired result of implementing the proposed actions.

The purpose of this comment period is to provide an opportunity for the public to provide early and meaningful participation on a proposed action prior to a decision being made by the Responsible Official. Those who provide comments during the comment period are eligible to appeal the decision pursuant to 36 CFR part 215 regulations.

A legal notice for the comment period is expected to be published in **The Daily Press**, of Ashland, Wisconsin, late in April of 2012. The opportunity to provide comments to establish eligibility to appeal under 36 CFR 215 ends 30 days following the date of publication. Commenters are responsible for verifying the date of publication. Written, facsimile, hand-delivered, oral, and electronic comments concerning this action will be accepted. The publication date of the legal notice in **The Daily Press** is the exclusive means for calculating the comment period.

In order to be considered when making the final decision, comments should be submitted to Constance Cummins, District Ranger by one of the following methods; mail: 10650 Nyman Ave., P.O. Box 896, Hayward, WI 54843, Attn. 20 Mile Creek Restoration; telephone: (715) 634-4821; facsimile (715) 634-3769; or email: comments-eastern-chequamegon-nicolet-great-divide@fs.fed.us (please put “Comments on 20 Mile Creek Restoration” in the subject line). Office hours, for those who wish to hand deliver their comments or provide them orally, are 7:30 a.m. to 4:00 p.m., Monday – Friday (except Federal holidays). Oral comments must be provided at the Responsible Official’s office or by telephone during those hours.

VIII. Timeframe and Process

The Environmental Assessment for this project is planned to be completed in June 2012. The interdisciplinary team will be reviewing comments, possibly developing alternatives to the proposed action, analyzing the effects of the proposed action and writing their resource reports on the project. If you would like more information or have questions on the project please contact Deb Proctor, Team Leader, at 715-634-4821, ext. 325 or by email at debralproctor@fs.fed.us. Jim Mineau, Hydrologist and the project designer, may also be contacted at 715-762-5182 or jmineau@fs.fed.us.

IX. Appendices (Attached as Separate Documents)

Appendix A: Vicinity Map and Aerial Photo of Project Area

Appendix B: Photos

Appendix C: Figures and Graphs